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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/901,531	07/09/2001	Brian C. Barnes	2000.054600	7123

23720 7590 08/26/2005

WILLIAMS, MORGAN & AMERSON, P.C.  
10333 RICHMOND, SUITE 1100  
HOUSTON, TX 77042

EXAMINER

BROWN, CHRISTOPHER J

ART UNIT PAPER NUMBER

2134

DATE MAILED: 08/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/901,531

Applicant(s)

BARNES ET AL.

Examiner

Christopher J. Brown

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2134

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☒ Claim(s) 5 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date 8/16/2005
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

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## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 6/6/05 have been fully considered but they are not persuasive.

As per claims 1, 12, and 21 Applicant argues that the physical layer of the invention is capable of authentication. The definition of the physical layer in the instant specification does not state that the physical layer is capable of such a function, (page 5 lines 12-18), (page 11 lines 12-14). The definition of physical layer in the instant specification states that the layer is responsible for the transmitting and receiving of signals. This is in accordance with world standards of the definition of physical layer, the most widely used being the OSI model. The Examiner previously cited the definition of the OSI physical layer in the Microsoft Computer Dictionary, which clearly showed the Physical layer does not support authentication. The applicant has indicated via telephone interview, that the definition they wish to use is not the OSI model, but the definition in the specification. Both the OSI model, and the instant specification definition still do not support authentication in the physical layer. Claims 1, 12, and 21 are rejected.

Applicant's argument with respect to the indefiniteness of the term "inconsistent" in claims 1, 12, and 21 has been considered but is not persuasive. The applicant's use of the word inconsistent does not define boundaries of what constitutes a violation of the

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authentication codes. The term "inconsistent" is broad and indefinite. Claims 1, 12, and 21 are rejected.

*Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 12, and 21 are rejected under 35 U.S.C. 112, first paragraph, because the specification does not reasonably provide enablement for authentication via the physical layer. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. The definition of the physical layer found in the instant specification on page 5 lines 12-18, and page 11 lines 12-14 does not enable the invention to authenticate on the physical layer.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 12 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Each claim states forwarding control codes and

an authentication code to a physical layer which signals a security violation if the control codes are inconsistent with the authentication code. As is well known in the art, the physical layer relates to gaining access to a medium and putting bits on the wire or extracting bits from the wire, the physical layer deals with issues such as volts, and amps. It is unclear how the physical layer could be used in authentication. The physical layer protocol is not capable of such an action.

The applicant describes the physical layer on page 5 lines 11-18 of the instant specification. There are no indications of how the physical layer could be used in an authentication method.

Also the definition of the physical layer can be found on page 302 of the Microsoft Computer Dictionary second edition. The definition agrees with the applicants description on page 5 lines 11-18, but does not provide for authentication.

Claims 1, 12 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Each claim states the control codes being "inconsistent" with the authentication code. It is not clear what the applicant the applicant is referring to as "inconsistent". The term "inconsistent" is broad and indefinite.

Claims 2-11, and 13-20 are rejected based on their dependence on the rejected independent claims.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1, 7-10, 11, 12, 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roeck US 6,594,305 in view of Nay US 5,237,567.**

As per claims 1, 8, 12, 19, 21 Roeck teaches a hardware unit (modem) adapted to receive an incoming signal over a communications channel, (Col 7 lines 60-65). Roeck teaches that the modem accepts control codes over the communications channel (messages), (Col 8 lines 33-37). Roeck teaches that the unit communicates with assigned transmission parameters (power, freq, and time slot), (Col 8 line 37).

Roeck does not teach authentication codes, or security violations.

Nay teaches generating an authentication code (hash or check sum) from data and transferring the data and authentication code to a unit, (Col 37 lines 35-51) If the codes are inconsistent, the unit signals a security violation, (Col 37 line 39).

It would be obvious to combine the communication system of Roeck with the authentication mechanism of Nay to prevent message tampering and improve security.

As per claims 7, and 18, Nay teaches that the program generates authentication code based on data (hash, checksum), (Col 37 lines 40-45).

As per claim 9 Nay teaches the processing unit comprises a computer, (Col 37 line 43).

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As per claim 10 Nay teaches the processor is coupled to a bus, (Col 37 lines 40-44). Nay teaches an expansion card coupled to the bus, (Col 37 lines 60-63).

As per claim 11, and 20, Roeck teaches that the hardware unit is adapted to prohibit at least some communication over the communication channel in response to an error (Col 8 lines 55-60).

**Claims 2, 3 and 13, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roeck US 6,594,305 in view of Nay US 5,237,567, in view of Spelman US 5,680,458.**

As per claims 2, 3, and, 13, 14, Spelman discloses sending an authentication code, hidden, out of band, (Col 4 lines 14-20).

It would be obvious to one skilled in the art to modify the Roeck-Nay system with the out of band messaging of Spelman to assure that the message has not been tampered with (Spelman Col 4 lines 31-34).

**Claims 4, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roeck US 6,594,305 in view of Nay US 5,237,567 in view of Mergard US 5,881,248**

As per claims 4 and 15, Mergard discloses use of the unused portions of the bus, (Col 1 lines 45-52). It would be obvious to modify the Roeck-Nay system with Mergard because the utilization of the bus improves performance.

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**Claims 6, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roeck US 6,594,305 in view of Nay US 5,237,567 in view of Whitmire US 6,115,817**

As per claims 6, and 17 Witmire discloses use of cryptography to send data over a network, the recipient decrypts all of the data, including codes, (Col 1 lines 48-60).

It would be obvious to modify the Roeck-Nay system with the cryptography or Witmire to increase security.

*Allowable Subject Matter*

4. Claims 5 and 16 are objected to due to their dependence on independent claims.

These claims currently overcome the prior art and would be in condition for allowance if the 112 rejections were overcome.

Neither Roeck, Nay, or any of the prior art of record shows "wherein the processing unit includes a data bus adapted to transfer data in frames having a number of fixed slots, and the software driver includes program instructions adapted to transfer the authentication code using a frame having more slots than the fixed number of slots.

*Conclusion*

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher J Brown whose telephone number is 703-305-8023. The examiner can normally be reached on 8:30-6:00.

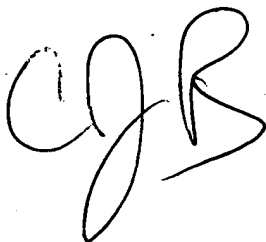
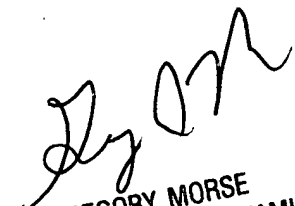


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Morse can be reached on 703-308-4789. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher J. Brown

A handwritten signature in black ink, appearing to be 'CJB', located below the name Christopher J. Brown.A handwritten signature in black ink, appearing to be 'G. Morse', located above the printed name Gregory Morse.

GREGORY MORSE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100